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ARTHROPOD-BORNE ANIMAL DISEASES RESEARCH LABORATORY

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ARTHROPOD-BORNE ANIMAL DISEASES RESEARCH LABORATORY

This laboratory, one of the more than 200 ARS research establishments across the country, is a special purpose facility. The skills and knowledge of both virology and entomology scientists are combined in research efforts.

Research in the laboratory complex is conducted on arthropod-borne virus diseases of domestic animals, especially the various types of equine encephalitides including VEE, EEE, and WEE. Also under study is blue-tongue disease in sheep and cattle with attention given to natural reservoirs of this disease in wild animals such as deer and antelope.

The main office and several laboratories are in Building 45, Denver Federal Center, west of Denver at Lakewood, Colorado. Animal isolation buildings, entomological research units, and corrals situated in a ranch-like arrangement occupy 35 acres of the Center's land also.

Included in the research complex is a special laboratory building totally dedicated to and designed for studying equine encephalomyelitis. This laboratory, the only one of its kind in the nation, provides maximum isolation and security to prevent transmission of the disease while conducting research on the viruses and their insect vectors.

Though originally established in 1940 as a diagnostic pathology facility of the Bureau of Animal Industry in the Denver Federal Customs building near the stockyards, both function and location have been changed over the years.

In 1946, the laboratory was moved to the Federal Center. Then, in 1954 the mission was changed from pathology to virology and it became USDA's only location conducting research and diagnosis of bluetongue disease. A year

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later, in cooperation with ARS' Livestock Insects Laboratory, Kerrville, Texas, research was initiated to determine how insects become infected, harbor, and transmit virus diseases, especially bluetongue, to domestic animals.

The intrusion of Venezuelan equine encephalomyelitis virus into this country in 1971 brought about the additional study of this virus to the research assignment.

The most recent addition to the mission came about in 1972 when studies were broadened to include epizootic hemorrhagic disease of deer, and eastern and western equine encephalomyelitis viruses.

Among the project's many accomplishments are:

- Establishment of the first laboratory colony of *Culicoides variipennis*, probably the primary vector of bluetongue.
- Development of a sensitive and rapid assay technique for bluetongue virus by using intravascular inoculations of embryonating hen's eggs.
- Development of a group-specific micro-agar gel precipitation test for diagnosis of bluetongue.
- Establishment that TC-83 VEE vaccine virus produced no permanent gross or microscopic damage to the brains or spinal cords of vaccinated horses.
- Confirmation that in horses the duration of TC-83 induced immunity to equine-virulent VEE virus exceeded 19 months.

If you desire additional information about the Laboratory, you may contact any of the following scientists at Bldg. 45, Entrance B, Box 25327, Denver Federal Center, Lakewood, Colorado 80225, or call (303) 234-2474:

Dr. Thomas E. Walton, Veterinarian
Location Leader & Research Leader

Dr. T. Lyn Barber
Veterinarian

Mr. Neil M. Foster
Microbiologist

Dr. Michael M. Jochim
Veterinarian

Dr. Robert H. Jones
Entomologist

Dr. Albert J. Luedke
Veterinarian

Dr. David H. Akey
Entomologist

Ms. Bonnie M. Bando
Microbiologist

*Dr. Hugh E. Metcalf, Epidemiologist
Animal and Plant Health Inspection Service

*Provides liaison between ARS and APHIS

Agricultural Research Service

The Agricultural Research Service (ARS), the major research arm of the United States Department of Agriculture, is organized in four geographical regions. The 12 western States including Hawaii comprise the Western Region. Headquarters is at Berkeley, California. The Region is divided into 6 Areas with more than 600 scientists plus supporting staffs at 44 locations.

ARS research programs are aimed at finding better ways of meeting the food and fiber needs of the American people. Major research subjects include: animal diseases and parasites, agricultural engineering, crops, entomology, soil and water conservation, processing and marketing agricultural products, consumer and food economics, human nutrition, new uses for farm products, and environmental quality.

The Agency works in close cooperation with State experiment stations and State departments of agriculture, farmer and rancher groups, industry, and other public and private organizations.